

and U.S. Patent No. 3,616,167 ("Gosden"). Applicant respectfully submits that the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gooden does not render obvious the present claims for the following reasons.

Claim 1, as amended, relates to a method for manufacturing a pleated filter material from a thermally bonded non-woven fabric. Claim 1 recites that the method includes the step of forming a single fibrous web from undrawn and drawn synthetic fibers. In addition, claim 1 recites that the method includes the step of preheating the fibrous web. Claim 1 also recites that the method includes the step of calendering the single fibrous web in a single calendering step. Furthermore, claim 1 recites that, during the single calendering step, the undrawn fibers in the single fibrous web are bonded in a tension-free manner between non-heated profiled calender rolls to form the non-woven fabric, without inhomogeneities over the cross-section of the non-woven fabric and without the use of flat bonding. In addition, claim 1 recites that, during the single calendering step, spacers are formed in the non-woven fabric to thereby form the filter material.

Newly cited reference Thornton et al. purport to describe a fluid filter that is formed by manufacturing an air laid batt containing randomly disposed structural fibers and a thermoplastic binder fiber. According to Thornton et al., the interstices between the fibers are fixed by applying a latex resin to the batt, thereby fixing the pore sizes of the filtering media before the filtering media is molded. Thornton et al. state that the filtering media is then molded into shape by using a plunger to tuck the media into an open cavity mold. Thornton et al. also state that the mold may be heated and pressure may be applied to the batt to mold the batt.

Newly cited reference Frank purports to describe a method of making a moldable, nonwoven composite material. According to Frank, the method includes blending a mix of first fibers and second thermoplastic fibers, the second fibers having a melting point lower than that of the first fibers and comprising approximately 40-80 percent of the blend. Frank states that the blend is then processed into a fibrous batt, and the batt is then consolidated into a nonwoven structure with the first fibers being thoroughly intermixed with the second fibers. Frank also states that the nonwoven structure is then heated to a temperature below the melting point of the first fibers and above the melting point of the second thermoplastic fibers to substantially liquefy the second fibers and form a thermoplastic resin, and the heated nonwoven structure is compressed to flow the

liquefied resin to displace air voids in the nonwoven structure and encapsulate the first fibers. Frank concludes that the nonwoven structure is cooled to form a composite material having substantially reduced air voids therein with the first fibers thoroughly encapsulated by the resin, and maintains that the composite material is substantially free from shrinkage when subjected to thermoforming.

Newly cited reference Gosden purports to describe a yarn or fabric containing bicomponent staple fibers wherein the staple fibers comprise two components existing in a sheath/core relationship, the core component having a lower melting point than the sheath component. Upon heat treatment the core component softens and exudes from the cut end portions of the staple fibers and bonds to adjacent fibers on cooling.

The Office Action states that “[i]t would have been obvious in the art to modify the process of Yamamoto et al by preheating a fiber web comprising undrawn (i.e. binder) fibers and drawn (i.e. matrix/structural) fibers, and then calendering the pre-heated web as such is notoriously well known in diverse fields art.” Office Action at page 2. The Office Action contends that this is evidenced by “Thornton et al, drawn to making a thermally formed filter, discloses a prior art process where a fiber web is heated to a melting temperature of binder fibers and then compacted to a desired thickness using a pair of unheated rollers (col. 1 lines 45-57).” Office Action at page 2. The Office Action contends that this is further evidenced by “DE ‘053, drawn to making absorbent pads, discloses heating a fiber web comprising binder fibers using hot air, and then consolidating the heated web using a pair of cold rollers (abstract).” Office Action at page 2. The Office Action also contends that this is evidenced by “Frank, drawn to a nonwoven moldable composite, discloses a preferred method of consolidating a web, the method comprises through-air heating the web comprising binder fibers to melt the binder fibers, and then using a pair of pinch rollers to densify and cool the heated web; and further teaches that alternative methods such as a hot-calendering or heat-densifying a web (col. 5 lines 6-43).” Office Action at page 3. The Office Action also contends that this is evidenced by “Gosden, drawn to making a staple fabric, discloses subjecting a web comprising bicomponent fibers to an oven to melt the binder component on each fiber, then passing the heated web to a pair of cold calender rolls (example 5).” Office Action at page 3. The Office Action concludes that “[a]s noted in the prior office action, one in the art would have chosen from

among limited effective known methods of thermally activating undrawn (i.e. binder) fibers in a fiber web and compressing the web with rolls." Office Action at page 3. The Office Action maintains that "[a] preference on whether to subject a fiber web comprising undrawn (i.e. binder) fibers directly to heated calender rolls or to pre-heat the web first and then subject it to unheated calender rolls is well within the purview of choice in the art." Office Action at page 3.

Applicant respectfully submits that the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gooden does not render obvious claim 1 for at least the reason that the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gooden fails to teach or suggest, either separately or in combination, all of the limitations recited in claim 1. For example, the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gooden fails to teach or suggest, either separately or in combination, a method for manufacturing a pleated filter material wherein the undrawn fibers in a single fibrous web are bonded in a tension-free manner between non-heated profiled calendar rolls, as recited in claim 1. As stated in the Examiner's Answer to Appeal Brief (Paper No. 22), "Yamamoto et al [] discloses that the undrawn fibers can be fuse-bonded at a low temperature and teaches pressing the sheet using a heated calender rolls (col. 3, lines 11-21; col. 5, lines 1-4; and col. 8 paragraph 5)." Examiner's Answer at p. 4 (emphasis added). In addition, neither Meyer, Narou and Norton disclose the use of non-heated calender rolls for bonding in a tension-free manner the undrawn fibers in a single fibrous web.

Furthermore, Thornton et al. state that "[i]t is also possible to achieve the same interlocking of the fiber structure to fix interstices between the fibers by using the thermoplastic binder fibers to fix the interstices by compressing the batt while heated to a temperature above the stick point of the binder fiber and then compacting the batt to the desired thickness by using unheated rollers." Column 1, lines 45 to 51. Thornton et al. state that "[t]he batt can then be molded." Column 1, line 51 (emphasis added). Thus, Thornton et al. purport to describe a method that, contrary to claim 1, uses flat bonding, and that does not employ non-heated profiled calender rolls to form the non-woven fabric, but that requires molding in a separate and additional process.

Frank states that "[i]mmediately upon completion of the heating process by unit 18, the heated nonwoven structure with its melted thermoplastic

resin is directed through a compression stage...". Column 5, lines 25 to 29. Frank also states that "[w]hile any type of compression technique known to the art may be utilized with the method of the invention, the preferred embodiment utilizes a pair of pinch rollers 22, 24 which are maintained preferably at a temperature below the melting point of the resin so as to assist in cooling of the resin." Column 5, lines 29 to 35. Frank also states that "[u]pon compression caused by the rollers 22, 24, the nonwoven structure is cooled to form the composite material 20 ... [and that] the rollers 22, 24 may assist in the initial cooling by being maintained at an appropriate lower temperature." Column 5, lines 39 to 43. The rollers 22 and 24 of rank are not shown or described to be profiled. On the contrary, Frank describes that the method of this invention "makes the composite material of the present invention highly suitable for any method of shaping parts requiring heating or thermoforming techniques." Thus, Frank describes a method that, contrary to claim 1, uses flat bonding, and that does not employ non-heated profiled calender rolls to form the non-woven fabric, but that requires a separate and additional thermoforming step in order to shape the composite material.

Gosden purports to describe, in Example 5 cited by the Office Action, a method whereby bicomponent staple fibers were carded into a web and the web passed through a hot air oven. Column 4, lines 12 to 15. Gosden also states that "[i]mmediately after leaving the oven the web was passed through the nip of a pair of cold calendar rolls." Column 4, lines 15 to 18. Gosden does not describe that the cold rolls are profiled, as recited in claim 1.

To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Since the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gooden does not teach, or even suggest, all of the limitations of claim 1 as more fully set forth above, it is respectfully submitted that the combination of Yamamoto,

Meyer, Narou, Norton, Thornton et al., Frank and Gooden does not render obvious claim 1.

It is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

....

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943 & 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only

conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a “technologically simple concept” -- which is not the case here -- there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

In summary, it is respectfully submitted that the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gooden does not render obvious amended claim 1. It is therefore respectfully submitted that claim 1 is allowable for these reasons, and withdrawal of this rejection with respect to claim 1 is therefore respectfully requested.

III. Conclusion

It is therefore respectfully submitted that all of the presently pending claims

are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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